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1.0 PURPOSE

The Institute of Nuclear Power Operations (INPO) document "Principles for a Strong Nuclear Safety Culture" describes the essential attributes of a healthy nuclear safety culture with the goal of creating a framework for open discussion and continuing evolution of safety culture.

This policy establishes the INPO principles as bases for evaluative criteria and performance expectations for a strong nuclear safety culture within NSPM. This policy also sets forth NSPM expectations for a safety conscious work environment (SCWE).

This policy also establishes the Risk Management Principles and Behaviors used to ensure risk is adequately considered when conducting activities that impact nuclear power operations.

2.0 APPLICABILITY

This policy applies to the entire NSPM Nuclear Department including parent utility workers, contractors, consultants and other individuals working at an NSPM nuclear plant or office.

The following INPO principles are incorporated in this document:

- Nuclear safety is everyone's responsibility
- Leaders demonstrate commitment to safety
- Trust permeates the organization
- Decision making represents safety first
- Nuclear is recognized as "different"
- A "what if" approach is cultivated
- Organizational learning is embraced
- Nuclear Safety undergoes constant examination

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The following Risk Management principles are incorporated in this document:

- Nothing is Routine
- Take the Time to Challenge Uncertainty
- Risk Significant Activities will be Made Visible
- Risk Activities will be Planned, Challenged, and Controlled
- No Risk Option – First Choice
- Prioritization to Minimize Operational Challenges

3.0 RESPONSIBILITIES

3.1 NSPM Officers and Site Vice Presidents are responsible for promoting, cultivating and assessing the nuclear safety culture at their sites and within NSPM.

3.2 NSPM Nuclear employees are expected to follow the Risk Management Principles and demonstrate the Risk Management Behaviors where applicable when activities that impact nuclear power operations.

3.3 Workers have the responsibility to promptly raise nuclear safety related concerns and issues, and to treat nuclear safety as their primary responsibility.

4.0 REQUIREMENTS

4.1 The NSPM Safety Conscious Work Environment

A. Workers at NSPM have the responsibility to ensure that they promptly raise their nuclear safety concerns.

B. NSPM has the obligation to provide the following:
   - A work environment that encourages workers to raise concerns without fear of retaliation;
   - Efficient methods and options for raising concerns; and
   - Appropriate safety conscious work environment information to workers.

C. NSPM will not tolerate acts of harassment, intimidation, retaliation, or discrimination toward workers that raise concerns.

4.2 NSPM and station managers will demonstrate through behaviors and actions, a commitment to nuclear safety and a strong nuclear safety culture by ensuring the following conditions exists at each NSPM station:

4.2.1 Policy/Procedures

- Performance management and other programs that implement financial rewards, professional recognition and sanctions are aligned with strong nuclear safety policies and implemented in a manner that reinforces the desired behaviors and outcomes. Potential unintended impacts that may result in conflicted incentives to report nuclear safety issues are evaluated and mitigated through effective change management and communication plans.

- A variety of methods are available by which personnel can raise nuclear safety concerns, without fear of retribution. The PEACH program elements are intended to accomplish many of these attributes from a programmatic level; the utility and effectiveness of these avenues should be periodically evaluated and maintained.

- Impacts of impending organizational changes (such as those caused by sale or acquisition, bargaining unit contract renegotiations, and economic restructuring) are anticipated and managed such that trust in the organization is maintained. Effective use of change management and communication plans serves as important cornerstones to these objectives.

- Features designed to maintain critical safety functions, such as core cooling, are recognized as particularly important and are maintained and modified under the highest levels of controls and independent oversight.

- Design and operating margins are carefully guarded and changed only with great thought and care. Special attention is placed on maintaining established defense-in-depth safeguards.

- Comprehensive, high-quality processes and procedures govern plant activities. Periodic effectiveness reviews are conducted to ensure that this objective is maintained.

- Periodic nuclear safety culture assessments are conducted and used as a basis for improvement. The scope and rigor of these reviews should identify and resolve latent organizational weaknesses.

4.2.2 Management and Oversight Activity

- The line organization is the primary source of information and the only source of direction. Other parties, such as Nuclear Oversight, Performance Assessment, offsite review committees, or other outside advisors do not dilute or undermine line authority and accountability.

- Continuous line management or independent nuclear oversight is provided during safety-significant tests or evolutions.

- Managers and supervisors are personally involved in high-quality training that consistently reinforces expected worker behaviors. Periodic effectiveness reviews are conducted to evaluate the effectiveness of these techniques and to confirm a strong line-management ownership of training.

- The organization maintains a knowledgeable workforce to support a broad spectrum of operational and technical decisions. Outside expertise is employed when necessary.

- Single-point accountability is maintained for important safety decisions, allowing for ongoing assessment and feedback as circumstances unfold. Senior management articulates clear expectations for organizational performance in these instances and establishes appropriate controls to ensure a predictable outcome in such instances.

- Managers regularly communicate to the workforce important decisions and their bases as a way of demonstrating and reinforcing a healthy nuclear safety culture. Effective communication methods are utilized to ensure that employees understand the “why” of complex decisions that could challenge safety. Professional dialog is encouraged at all times when such matters are discussed with plant staff.

- Equipment is rigorously maintained well within design requirements.

- Insights from probabilistic risk analyses are considered in daily plant activities and plant change processes.

- Employee mastery of reactor and power plant fundamentals, as appropriate to the job position, establishes a solid foundation to support sound decisions and behaviors.

- While individuals expect successful outcomes of daily activities, they recognize the possibility of mistakes and worst-case scenarios and develop contingency plans to effectively deal with these possibilities.

- The organization avoids complacency and cultivates a continuous learning environment. The attitude that "it can't happen here" is not allowed in the organization. Utilization of an effective operating experience program is an important attribute of effective job planning.

- Expertise in root cause analysis is applied effectively to examine events and improve safety focus. Opportunities to learn lessons that are obtained in such reviews are effectively utilized to enhance future site and fleet performance.

- A mix of self-assessment and independent oversight coordinated by site performance assessment personnel reflects an integrated and balanced approach. This balance is periodically reviewed and adjusted as needed.

- The pitfalls of over-focusing on a narrow set of key performance indicators are recognized. The organization is alert to detect and respond to indicators that may signal declining performance. Management Review Meetings are periodically held to challenge these indicators in a collegial and professional manner.

- The insights and perspectives provided by Nuclear Oversight, Performance Assessment and other independent reviewers are valued, appreciated and utilized to enhance future performance.

- Processes are established to ensure that senior executives and board members are periodically briefed on results of nuclear oversight group activities to gain insights into station safety performance.

4.2.3 Behaviors, Attitudes, Knowledge, and Values

- People and their professional capabilities, values, and experiences are regarded as the nuclear organization's most valuable asset. Staffing levels are consistent with the demands related to maintaining safety and reliability.

- Relationships among utilities, operating companies, and owners are not allowed to obscure or diminish a clear and unambiguous line of responsibility for nuclear safety.

- All personnel understand the importance of adherence to nuclear safety standards. Healthy accountability is exercised at all levels of the organization for shortfalls in meeting standards. These standards are well publicized, understood and adhered to at all levels of the organization.

- Managers and supervisors practice visible leadership in the field by placing "eyes on the problem," coaching, mentoring, and reinforcing standards. Deviations from station expectations are corrected promptly and effectively. Emerging performance trends are recognized early and acted upon to enhance future performance.

- Leaders recognize that aggressive production goals can appear to send mixed signals on the importance of nuclear safety. Managers are sensitive to detect and avoid these misunderstandings by use of effective communication and change management techniques as may be appropriate.

- The bases, expected outcomes, potential problems, planned contingencies, and abort criteria for important operational decisions are communicated and understood by all key personnel and stakeholders involved in the evolution. Opportunities to discuss critical attributes and ensure alignment are provided and utilized effectively at all levels of the organization.

- Employees are expected and encouraged to offer innovative ideas to help solve problems. Formal and informal rewards and recognition programs support these efforts.

- Differing opinions are welcomed and respected via the fleet Differing Professional Opinion Program attribute of the PEACH process. When needed, fair and objective methods are used to resolve conflict and unsettled differing professional opinions.

- Supervisors are skilled in responding to employee questions in an open, honest manner. They are recognized as an important part of the management team, crucial to translating nuclear safety culture into practical terms. Senior management conducts periodic checks to ensure alignment and to address emerging barriers to effective communication at all levels.

- Complete, accurate, and forthright information is provided to nuclear oversight and regulatory organizations. Unintended errors, omissions or clarification to previously noticed information is provided in a timely and forthright manner.

- Candid dialogue and debate are encouraged when safety issues are being evaluated. Robust discussion and healthy conflict are recognized as a natural result of diversity of expertise and experience. Such discussions occur in a collegial and professional demeanor.

- Anomalies are thoroughly investigated, promptly mitigated, and periodically analyzed in the aggregate. Personnel do not proceed in the face of uncertainty.

- Workers do not permit conditions or behaviors that have the potential to reduce operating or design margins to exist for extended periods. These circumstances are promptly identified and corrected.

- Effective training is utilized to uphold management's standards and expectations in all operational areas. Beyond teaching knowledge and skills, trainers are adept at instilling nuclear safety values and beliefs.

- Individuals are well informed of the underlying lessons learned from significant industry and station events, and they are committed to not repeating these mistakes.

4.2.4 NSPM will periodically assess its nuclear safety culture using the INPO principle and other appropriate sources as comparative standards for the assessment.

4.3 Risk Management Principles and Risk Management Behaviors

4.3.1 Risk Management Principles describes the fundamental values that should be followed when conducting activities that may have an adverse consequence if done incorrectly. Understanding, evaluating, and mitigating risk when conducting activities at a nuclear power plant reduce the frequency and severity of events and reduces the hazards associated with the nuclear, radiological, industrial, or environmental safety. Imbedded with every activity and decision made are potential regulatory consequences. When evaluating the risk involved with an activity or decision, consideration should be given for the potential or actual regulatory impact. The six basic Risk Management Principles are as follows:

- **Nothing is Routine** – due to the unique characteristics of nuclear power, nothing can be viewed as a routine activity. More risk is often unintentionally accepted for activities that are performed on a frequent basis due to past successful performance. Each task, no matter how frequently performed, should be evaluated for risk and performed with the same rigor applied if it were a first time performance.
- **Take Time to Challenge Uncertainty** – questions may come up as activities are identified, planned, scheduled, and executed. With each question, two paths can be taken; assumptions and rationalization can be used to justify there is not problem, or questions can be asked to gain clarity or confirm acceptability. Workers should apply the “take two” rule (two minutes, two hours, two days) to ensure their questions are adequately answered before proceeding.
- **Risk Significant Activities Will be Made Visible** – As higher risk activities are identified, they are made visible by notating them on the schedule, including them in discussions during daily meetings, and challenging the controls in place to ensure success. Higher levels of visibility serve to alert the organization to provide more critical challenge and more attention when the activities are performed

- **Risk Activities will be Planned, Challenged, and Controlled** – As higher risk activities are identified more rigorous planning is developed including abort criteria and contingency planning. High risk activities are formally challenged to ensure the full risk is understood and reasonable actions are taken to reduce or eliminate the risk. Execution of high risk activities include assurance that the workers are knowledgeable and proficient in the task, the guidance for the task is clear and unambiguous, and sufficient oversight is used to monitor performance.
- **No Risk Option – First Choice** – Multiple options with differing plant configuration, personnel, and process are identified with each option evaluated for the level of risk and reward. The lowest risk options should be considered as the first choice with a clear justification why the no-risk option was not used.
- **Prioritization to Minimize Operational Challenges** – As activities are planned and evaluated for risk, consideration should be given to the adverse impact the condition or activity has on the operation of the plant. Plant Operations provides the last line of defense for Nuclear Safety, so any activity or condition that distracts or impedes in their mission to safety operate the plant should be given a higher priority for.

4.3.2 Risk Management Behaviors describes are some specific behaviors that when demonstrated, support the Risk Management Principles. Practicing and repeating the demonstration of these behaviors will result in a culture that consistently applies the risk management principles.

- **Stop/Engage when we Hear Justifications or the Word "Routine**" – This behavior best aligns with the principle "Nothing is Routine". Use of the words "routine" implies that the task is simple and carries little risk. This can result in task performers or supervision not giving the task adequate respect for its complexity of risk. When this language is heard, the expected behavior is to stop the conversation and challenge the "routine" nature of the task. Each job has some level of complexity and risk that needs to be evaluated when planning and performing the task.
- **Methodical Fact Based Decision Making** – This behavior best aligns with the principle "no risk option – first choice". The first behavior should be the identification and verbalization that a decision needs to be made. The next series of behaviors is following through with the tool used for decision making such as the Operational Decision Making Process (Type 1 or Type 2) or the OSCAR model to formalize the decision. Once the decision has been made, the behavior would be to clearly delineate the decision and

basis to get alignment with the stakeholders and their confirmation that it was the appropriate low risk choice.

- **Risk Activities are clearly Identified with Clear Owners** – This behavior best aligns with the principle "risk significant activities will be made visible". As risk significant activities are identified the expected behaviors is to assign an owner of the activity. The owner should be someone with sufficient knowledge and skill to perform the activity or provide critical oversight. The owner should be the focal point for questions, challenges, status, and directions related to the activity.
- **Verify Commitments in Detail / Follow Through and Validate the Specifics** – This behavior best aligns with the principle "risk activities will be planned, challenged, and controlled". As plans are developed to execute higher risk activities, there should be clear ownership of actions and commitments with periodic updates and reviews of progress made to meet those commitments. For higher risk jobs, assumptions should be challenged by asking "show me" questions, and actual task performance and contingency plans should be tested with dry-runs, table-tops, or simulator runs to test assumptions taken and controls used for the job.

5.0 REQUIRED RECORDS

None

6.0 REFERENCES & DEFINITIONS

Nuclear Safety Culture: An organization's values and behaviors –modeled by its leaders and internalized by its members – that serve to make Nuclear Safety the overriding priority.[1]

Nuclear Safety: The assurance that the health and safety of plant workers and the public is adequately protected against radioactivity originating from the operation of the plant. Nuclear safety begins with prevention and mitigation of potential and actual events related to reactivity control, decay heat removal, and confinement of radioactive materials.

[1] Based on Principles for a Strong Nuclear Safety Culture, INPO, November (2003)

Radiological Safety: The summation of behaviors, work practices, policies and procedure adherence that ensures workers maintain their radiation exposure as low as reasonably achievable (ALARA). These attributes also ensure the exposure to the public is ALARA.

Environmental Safety: The summation of behaviors, work practices, policies, and procedure adherence that limits station impact on the environment. Inherent in this policy is the commitment to operate NSPM facilities in a manner that meets or surpasses all federal, state, and local environmental regulations.

Personal Safety: The safety of workers in the work place. It is the summation of behaviors, work practices (especially the use of personal protective equipment), policies, and procedure adherence, that enables quality of life and that workers work safely.

Industrial Safety: The safety of the workplace itself. Industrial safety includes using engineering controls and other support equipment to eliminate hazards, and facility caused exposure to unsafe working conditions. Hardware and effective procedural guidance are critical to the success of the industrial safety program.

Organizational Culture: The shared basic assumptions that are developed in an organization as it learns and copes with problems. The basic assumptions that have worked well enough to be considered valid are taught to new members of the organization as the correct way to perceive, think and feel. Culture is the sum of group learning.

Conservative Decision-Making: The act of making decisions that are characterized by:

- An avoidance of haste. The urge to do something, anything, (in an abnormal or casualty situation) can be very strong, but it must be counteracted by a reasoned, analytical assessment of the problem. Faced with uncertainty, each person must force himself or herself to pause and think before acting.

- A deep regard for the power of the reactor core. Decisions that result in changes to core reactivity are made in a deliberate, coordinated, carefully controlled manner while closely monitoring reactor response. Decisions that could affect the ability to remove decay heat from a shutdown reactor are also made in a deliberate, coordinated, carefully controlled manner while closely monitoring the parameters used to ensure decay heat is being adequately removed. Faced with uncertainty, each person must force himself or herself to pause and think about how he or she is affecting reactor power.

- An avoidance of wasteful or adverse potential outcomes. Each person must remain focused on safety when faced with economic and competitive pressures. Faced with uncertainty, each individual must pause and consider whether their decisions are being overly influenced by a desire to produce electricity.

- Use of Risk Principles and Fact Based Decision Making Tools to ensure a systematic approach is taken when making decisions and the proper consideration of risk is employed.

Safety Conscious Working Environment: An environment wherein employees and contractors feel encouraged and obligated to raise concerns to management and the NRC without hesitation. In addition, when concerns or allegations are raised, the appropriate level of management will review the facts, evaluate or reconsider the action in question, and, where warranted, remedy the matter.

Inherent in this definition is the principle that employees will typically report safety concerns to management using their established chain of command and the station's corrective action process. Employees may also use the Employee Concerns Program (ECP) to raise safety concerns. Finally, employees may pursue safety concerns directly with the NRC.

Worker: Any NSPM employee, parent utility employee, contractor, consultant or other individual working at an NSPM nuclear plant or office.

INPO 03-004, Performance Objectives and Criteria for Operating Nuclear Electric Generating Stations, Safety Culture Objective, November (2003)

Reinforcing a Strong Safety Culture, Attachment "A", INPO Point Paper August 31, 1998

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Basic Safety Principles for Nuclear Power Plants, Safety Series No. 75-INSAG-3, IAEA, Vienna (1988).

Periodic Safety Review of Operational Nuclear Power Plants, Safety Guide NO. NS-G-2, 10, IAEA, Vienna (1994)

Excellence in Human Performance, INPO, September (1997)

Principles for a Strong Nuclear Safety Culture, INPO, (Preliminary), November (2003)

Integrated Risk Management process (FP-WM-IRM-01)

Operational Decision Making process (FP-OP-ODM-01)

7.0 REVISION HISTORY

Date	Revision Number	Change
06/28/2010	6	Added guidance to consider Regulatory Risk Factors with decision making.